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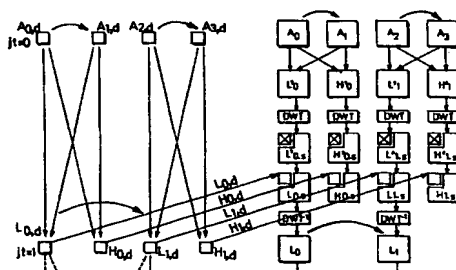
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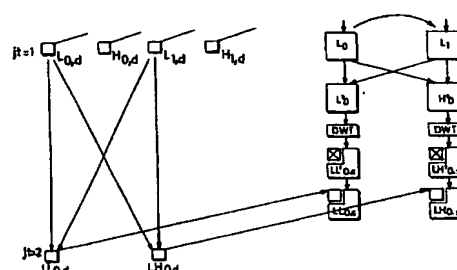
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **DRIFT-FREE VIDEO ENCODING AND DECODING METHOD, AND CORRESPONDING DEVICES**



A



B

(57) Abstract: Three-dimensional (3D) subband coding schemes use motion compensation in their temporal filtering stage. Unfortunately, this procedure introduces two drawbacks : (a) the MC being applied at the full resolution, a drift appears when decoding at a lower resolution, and (b) all the motion vectors estimated at full resolution are transmitted, which is a waste of bits. According to the invention, a low resolution sequence is first obtained by generating from the original input sequence of frames - by means of a wavelet decomposition - a sequence of low resolution frames and performing on them a motion compensated spatio-temporal analysis. Then, a motion compensated spatio-temporal analysis of each full resolution group of frames is performed, and the low frequency subbands of the decomposition are finally replaced, at each temporal decomposition level, by the corresponding spatio-temporal subbands of the generated low resolution sequence. The modified sequence thus obtained is finally coded. Thanks to this approach, a good behavior at low resolution is maintained (no more drift) while getting closer to the performance of a classic 3D subband codec at full resolution.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 03/04326

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N7/26 H04N7/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>BOTTREAU V ET AL: "A FULLY SCALABLE 3D SUBBAND VIDEO CODEC" PROCEEDINGS 2001 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP 2001. THESSALONIKI, GREECE, OCT. 7 - 10, 2001, INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, NEW YORK, NY: IEEE, US, vol. 2 OF 3. CONF. 8, 7 October 2001 (2001-10-07), pages 1017-1020, XP001045747 ISBN: 0-7803-6725-1 the whole document</p> <p style="text-align: center;">--- -/--</p>	1-4

☒ Further documents are listed in the continuation of box C.☐ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WOODS J W ET AL: "SUBBAND ENCODING OF VIDEO SEQUENCES" PROCEEDINGS OF THE SPIE, SPIE, BELLINGHAM, VA, US, vol. 1199, no. PART 2, 8 November 1989 (1989-11-08), pages 724-732, XP001130805 ISSN: 0277-786X page 725 -page 726, paragraphs II-III figures 1,2	1-4
A	JOON-HYEON JEON ET AL: "ON THE HIERARCHICAL BLOCK MOTION ESTIMATION FOR VIDEO SUBBAND CODING" VISUAL COMMUNICATION AND IMAGE PROCESSING '91: VISUAL COMMUNICATION. BOSTON, NOV. 11 - 13, 1991, PROCEEDINGS OF SPIE, BELLINGHAM, SPIE, US, vol. 2 VOL. 1605, 11 November 1991 (1991-11-11), pages 954-962, XP000479301 page 955 -page 957, paragraphs 2,3 figures 1-3	1-4
A	WOODS J W ET AL: "A RESOLUTION AND FRAME-RATE SCALABLE SUBBAND/WAVELET VIDEO CODER" IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, IEEE INC. NEW YORK, US, vol. 11, no. 9, September 2001 (2001-09), pages 1035-1044, XP001082208 ISSN: 1051-8215 cited in the application page 1035 -page 1042, paragraphs I-II figures 3-5	1-4
A	CHENG P-Y ET AL: "MULTISCALE VIDEO COMPRESSION USING WAVELET TRANSFORM AND MOTION COMPENSATION" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. (ICIP). WASHINGTON, OCT. 23 - 26, 1995, LOS ALAMITOS, IEEE COMP. SOC. PRESS, US, vol. 1, 23 October 1995 (1995-10-23), pages 606-609, XP000624311 ISBN: 0-7803-3122-2 page 607 -page 608, paragraph 2	1-4